

4,431,193 to *Nesbitt* in view of U.S. Patent No. 5,068,151 to *Nakamura*. The Examiner then provisionally rejected claims 1-8 under the judicially created doctrine of double patenting over claims 1-6 of co-pending Application Serial No. 08/870,585, and claims 1-8 of co-pending Application Serial No. 08/926,246.

Applicant herein presents clarifying remarks and respectfully submits that claims 1-8 are in condition for allowance.

A. The Examiner's Rejection of Claims 1-8 Under 35 U.S.C. § 103 as Being Obvious Over *Nesbitt* in View of *Nakamura* Has Been Overcome

The Examiner rejected claims 1-8 under 35 U.S.C. § 103 as obvious over U.S. Patent No. 4,431,193 to *Nesbitt* in view of U.S. Patent No. 5,068,151 to *Nakamura*. Particularly, the Examiner stated that:

Claims 1-8 are rejected under 35 U.S.C. § 103 as being unpatentable over *Nesbitt* in view of *Nakamura*. *Nesbitt* discloses the claimed invention with the exception of the particulars of the materials utilized. *Nesbitt* does make clear though that various suitable resins may be utilized. One of ordinary skill in the art would, in view of *Nesbitt*'s disclosure, recognize that other materials known in the art could have been utilized in the invention so long as the cover comprised a harder inner layer of Shore D hardness of 60 with a softer outer layer. As disclosed by *Nakamura* the use of hard materials such as that claimed for the inner cover layer is known in the art. In response to applicant's remarks of 3/26/98 *Nakamura* also indicates that these materials may be formed as blends, (See Col. 2). It would have been obvious to one of ordinary skill in the art to have utilized such known materials which are of the class sought by *Nesbitt* in the manufacture of *Nesbitt*'s ball absent a showing of unexpected results.

Regarding claims 2 and 3, it would have been obvious to one of ordinary skill in the art to have increased the thicknesses of *Nesbitt*'s layers to increase the durability of the ball.

(Office Action, pp. 2-3).

1. Examiner Ignores the Fact that *Nesbitt* Teaches the Use of a Low Acid Ionomer

First, the Examiner contends that *Nakamura* teaches specific types of hard materials that *Nesbitt*, in the '193 patent, teaches should be used in manufacturing a golf ball.

However, a closer reading of that patent reveals that *Nesbitt* continues and discloses that in producing a multi-layer golf ball, a first interior layer that is formed

about a spherical core, is comprised of a hard, high flexural modulus resinous material such as type 1605 Surlyn® (now designated Surlyn® 8940), col. 2, lines 34-39.

The Examiner ignores the fact that this is a low acid ionomer resin. Thus, in point of fact, *Nesbitt* teaches the use of a low acid ionomer resin for an interior mantle layer, which is directly contrary to a claimed feature of the present invention golf balls, i.e. that a high acid ionomer be used in such layers. Thus, *Nesbitt* actually teaches away from the claimed invention.

2. Nakamura Does Not Distinguish Between High Acid and Low Acid

Notwithstanding the previously noted defect, the Examiner's rejection is also flawed for the following reasons. The Examiner states in the Office Action that "[a]s disclosed by *Nakamura* the use of hard materials such as that claimed for the inner cover layer is known in the art." (Office Action; pp. 2-3).

According to the present application and as generally understood in the industry, a "high acid ionomer" would not include an ionomer including 10%, or for that matter, 10% to 15%, by weight of an alpha, beta-unsaturated carboxylic acid. A "high acid ionomer" as that term is used in the industry, refers to an ionomer that contains greater than about 16% by weight of a carboxylic acid. This was the specific definition of "high acid ionomer" provided in the present application (see page 12 of the specification).

Furthermore, the Examiner's statement, or rather view as to what *Nakamura* teaches, actually supports the view that *Nakamura* does not distinguish between high acid ionomers and low acid ionomers. *Nakamura* fails to disclose any advantage of using high acid resins (i.e. >16% acid) versus low acid resins. In fact, *Nakamura* does not distinguish high acid ionomers from low acid ionomers since *Nakamura* merely describes such ionomers as containing from 5% to 20%, thereby treating them as equivalent to one another.

As previously noted, since *Nesbitt* teaches the use of a low acid ionomer, one would not be motivated to refer to a reference describing high acid ionomers. If the *Nakamura* patent were magically placed before a formulator, in combination with the *Nesbitt* patent, the *Nakamura* patent still fails to teach the use of a high acid ionomer instead of a low acid ionomer since it treats both as equivalents to one another. Simply

put, there is no motivation provided by these patents to utilize a high acid ionomer in an inner layer of a golf ball. For at least these reasons, the Examiner's reliance upon the '151 patent to *Nakamura* is misplaced.

3. *Nakamura* Does Not Teach the Use of a "High Acid Ionomer"

Nakamura generally relates to the use of a low acid ionomer, as opposed to high acid, to produce the outer cover layer of a golf ball. *Nakamura* briefly suggests that the acid content of the ionomer resin utilized may be of 5% or 10% to 20% by weight. *Nakamura* fails to disclose any advantage of using high acid resins, i.e. greater than 16% acid, versus low acid resins. In fact, no Example of *Nakamura* uses greater than 15% acid.

The claimed material, i.e. "a high acid ionomer including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid" is not taught in secondary reference *Nakamura*. The Examiner is confusing the specifically claimed material with the very broad class of materials of ionomers containing 10 to 20% by weight acid. As previously explained, *Nakamura* does not distinguish between high acid ionomers from low acid ionomers, but instead treats them as equivalents.

4. Mischaracterization of Statement that High Acid Ionomer Resins Were Not Commercially Available Prior to January, 1992

In explaining that *Nakamura* does not distinguish between the class of ionomers now known as low acid ionomers from the class of ionomers now known as high acid ionomers, Applicant noted that high acid ionomer resins were not generally commercially available prior to January 1992. Applicant brought this to the Examiner's attention since it further demonstrates that *Nakamura* cannot be read as distinguishing low acid ionomers from high acid ionomers, since at the time of filing the application which matured into the *Nakamura* patent¹, the golfing industry and marketplace were not particularly aware of the differences between the performance and properties resulting from such resins. As a matter of fact, the golfing industry later learned that high acid ionomers produced significant durability problems when utilized in golf ball

¹The U.S. application was filed on February 2, 1990, and the Japanese parent patent was filed on February 6, 1989.

construction.

5. Examiner's Reasons for Rejecting Remaining Claims are Deficient

Turning attention to the specific rejection of claims 2 and 3, the Examiner argued that "it would have been obvious to one of ordinary skill in the art to have increased the thickness of Nesbitt's layers to increase the durability of the ball." (Office Action, p. 3).

It is respectfully submitted that the Examiner's reading of these claims is oversimplified and ignores the fact that they recite particular aspects of the invention in combination with features in claim 1, from which each of these claims depend.

Claims 2 and 3 are both dependent from independent claim 1 and so, contain all of the recitations of that claim. In addition, these claims recite additional aspects pertaining to particular thickness ranges for the inner and outer cover layers. Claim 2 recites that the inner cover layer has a thickness of about 0.100 to about 0.010 inches and the outer cover layer has a thickness of about 0.010 to about 0.70 inches. This particular combination of thickness ranges for the covers, particularly when taken in combination with the high acid ionomer aspect of the inner cover layer defined in claim 1, is simply not described or suggested in the *Nesbitt* and *Nakamura* patents. Similarly, claim 3 recites a unique combination of specific thicknesses for the inner cover layer and outer cover layer -- the inner cover layer has a thickness of about 0.050 inches and the outer cover layer has a thickness of about 0.055 inches -- which is not taught or suggested in the patents to *Nesbitt* and *Nakamura*. This particular aspect, especially when taken in combination with the other previously described aspects called out in claim 1, is in no way described in the cited references. For at least these reasons, claims 2 and 3 are nonobvious and patentable over the cited art.

Claim 4 is dependent from claim 1 and so contains all of the recitations of that claim. Claim 4 further recites that the inner cover layer comprises a low flexural modulus ionomer resin including a blend of hard high modulus ionomer with a soft low modulus ionomer. The high modulus ionomer is recited as a metal salt of a copolymer having from 2 to 8 carbon atoms and an unsaturated monocarboxylic acid having from 3 to 8 carbon atoms. Claim 4 further recites the low modulus ionomer being a metal salt

of a terpolymer of an olefin having 2 to 8 carbon atoms, acrylic acid and an unsaturated monomer of the acrylate ester class having from 1 to 21 carbon atoms. There is absolutely no mention of this combination of components, nor the expressly recited aspects of these components in either of the patents to *Nesbitt* or *Nakamura*.

Claims 5 and 6, both of which are dependent from claim 4 and so contain all of its recitations, recite specific proportion ranges for the hard high modulus ionomer resin and the soft low modulus ionomer resin. There is absolutely no mention or even hint of these aspects, and especially the combination of these features, in the *Nesbitt* and *Nakamura* patents. For at least these reasons, all of claims 4-6 are non-obvious and patentable over the prior art of record.

Claim 7 recites a multi-layer golf ball comprising a spherical core, an inner cover layer molded over the core, and an outer cover layer to form a multi-layer golf ball. The inner cover layer is recited as including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid. As previously noted, *Nesbitt* entirely fails to disclose or even suggest incorporating a high acid ionomeric resin in an inner cover layer. And, *Nakamura* fails to disclose or even remotely suggest the use of hard, high acid ionomer resins to formulate the inner cover.

In addition, claim 7 further specifically recites that the particular ionomeric resin utilized in the inner cover layer have a modulus of from about 15,000 to about 70,000 psi. Neither *Nakamura* nor *Nesbitt*, taken singularly or in combination, teach, describe, or suggest this aspect. Accordingly, the unique combination of these aspects of the inner cover layer, i.e., that it comprise at least 16% of an alpha, beta-unsaturated carboxylic acid, and that it comprise a certain ionomeric resin having a particular modulus, is not taught in either of the patents cited by the Examiner.

Claim 7 further recites and in addition to the foregoing aspects, that the outer cover layer comprise a specific blend of two components. The first component is a sodium or zinc salt of a copolymer having from 2 to 8 carbon atoms and an unsaturated monocarboxylic acid having from 3 to 8 carbon atoms. Neither *Nakamura* nor *Nesbitt*, taken individually or in combination, teach, describe or even suggest this aspect. The non-obviousness of this claim is readily apparent in view of this claimed aspect, especially when taken in conjunction with the previously noted features of the inner cover layer.

The second component utilized in the outer cover layer blend, and expressly recited in claim 7, is a sodium or zinc salt of a terpolymer of an olefin having 2 to 8 carbon atoms, acrylic acid, and an unsaturated monomer of the acrylate ester class having from 1 to 21 carbon atoms.

It is indisputable that the references relied upon by the Examiner entirely fail to teach or even suggest this aspect, and this aspect taken in combination with the foregoing features of the inner cover layer and the other component utilized in the outer cover layer blend.

Notwithstanding the nonobviousness of the noted subject matter recited in claim 7, claim 7 further recites yet another aspect of the claimed golf ball -- that the outer cover layer have a modulus in the range of from about 1,000 to about 30,000 psi. Neither of the patents cited by the Examiner teach this aspect. And, neither of the patents teach, or even remotely hint at, a multi-layer golf ball having the unique combination of features recited in claim 7 -- that the inner cover layer comprise an ionomeric resin including at least 16% of an alpha, beta, unsaturated carboxylic acid, that the ionomeric resin of the inner cover layer has a modulus of from about 15,000 to about 70,000 psi, that the outer cover layer comprises a blend of (i) a sodium or zinc salt of a copolymer having from 2 to 8 carbon atoms and an unsaturated monocarboxylic acid having from 3 to 8 carbon atoms and (ii) a sodium or zinc salt of terpolymer of an olefin having 2 to 8 carbon atoms, acrylic acid, and an unsaturated monomer of the acrylate ester class having from 1 to 21 carbon atoms, and that the outer cover layer has a modulus in a range of about 1,000 to about 30,000 psi. Clearly, claim 7 recites patentable subject matter.

Claim 8 recites a multi-layer golf ball comprising a spherical core, an inner cover layer, and an outer cover layer. Claim 8 calls for the inner cover layer to comprise an ionomeric resin that includes no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid. Claim 8 further calls for the particular ionomeric resin to have a modulus of from about 15,000 psi to about 70,000 psi. This aspect is not described in either the *Nakamura* or *Nesbitt* patents. The combination of this aspect and the particular proportion of the certain ionomeric resin called for in claim 8 is not described in the *Nakamura* or *Nesbitt* patents.

Claim 8 also recites that the outer cover layer comprises a specific type

of non-ionomeric thermoplastic selected from a group of polyester elastomer, polyester polyurethane and polyester amide. Claim 8 additionally recites that the outer cover layer have a modulus in the range of from about 1,000 to about 30,000 psi. Again, there is no mention in either of the two references relied upon by the Examiner of an outer cover layer comprising one or more of these types of non-ionomeric thermoplastics, having a modulus within this recited range, in combination with an inner cover layer that comprises an ionomeric resin that includes a certain amount of an alpha, beta-unsaturated carboxylic acid and that has a specific modulus. It simply cannot be said that claim 8 recites obvious subject matter.

6. The Commercial Success of the Claimed Golf Balls Warrants Patentability

The claimed golf balls of the present application have achieved enormous commercial success. (Exhibits 1-25). Particularly, the claimed golf balls of the present application have already been used by golfers on the Professional Golf Association Tour to win numerous tournaments, including the Masters Tournament and the British Open, shortly after its introduction. (Exhibits 19, 21-23).

More importantly, the claimed golf balls of the present application have become the most popular multi-layered golf ball played by golfers on the Professional Golf Association Tour. (Exhibit 20). Hundreds of Tour professionals worldwide have begun using the claimed golf ball since its introduction. (Exhibits 24-25).

Clearly, the claimed golf balls are distinguishable from the Examiner's cited references as the particular features recited form a golf ball which has achieved unmarkable success since its inception.

B. The Provisional Obviousness Type Double Patenting Rejections

Upon allowance of claims 1-8 of the present application, Applicant will submit one or more terminal disclaimers as may be necessary in the two co-pending applications cited by the Examiner, U.S. Application Serial Nos. 08/870,585 and 08/926,246.



CONCLUSION

In view of the foregoing, Applicant respectfully submits that claims 1-8 are in condition for allowance. Applicant respectfully requests that early notification of such allowance is given.

Respectfully submitted,

FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP

DATED: April 30, 2000

Richard M. Klein
Reg. No. 33,000
1100 Superior Avenue, Seventh Floor
Cleveland, Ohio 44114-2518
Tel: (216) 861-5582

CERTIFICATE OF MAILING

I hereby certify that this **AMENDMENT AND RESPONSE** in connection with U.S. Patent Application Serial No. **08/920,070** is being deposited with the United States Postal Service as first-class mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this 30 day of April, 2000.

By:

Nancy L. Wasikowski